File   Edit   View   Tools   Window   Help

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US-PAT-NO: 6188392

DOCUMENT-IDENTIFIER: US 6188392 B1
See image for Certificate of Correction

TITLE: Electronic pen device

-------- KWIC --------

TITLE - TI (1):
    Electronic pen device

Brief Summary Text - BSTX (7):
    Other input devices include digitizer tablets that involve the use of a flat
touch pad which can be touched by a stylus. The pad senses the location of the
touching object usually by resistance or capacitance disturbances in a field
associated with the pad. Digitizer tablets perform well for entering graphics,
report absolute position well, but are impractical for entering textual data.

Brief Summary Text - BSTX (8):
    Certain tablets have been proposed by which both graphics and textual data
could be entered in a computer using a stylus. These devices are typically
tethered to the user's computer by an electrical cable, and provide no memory
storage to permit autonomous usage. Further, these devices are inconvenient
for the user due to their physical dimensions. Most users, would find it
desirable to have a computer input device that: is autonomous, i.e. untethered
by cable connection to a computer; permits easy and precisely controllable
input of both text and graphics data; fits in the hand like a pen or pencil for
ease of use; affords memory capacity to store accumulated input of data of most
users over the course of a day; and can be carried unobtrusively in a user's
pocket.

Brief Summary Text - BSTX (9):
    Furthermore, recently there has been an increased interest in input devices
or systems that may be used for manually entering data in the computer and also
for handwriting recognition and signature verification. These devices utilize
a pen or stylus for tracing a path on a resistive grid or capacitive grid on a
graphics tablet or computer screen. The computer digitizes the information
conveyed by the pen when the pen crosses a certain predetermined point on the
grid. Data processing is then utilized for processing a two-dimensional

U.S. Patent   Feb. 13, 2001   Sheet 1 of 6   US 6,188,392 B1
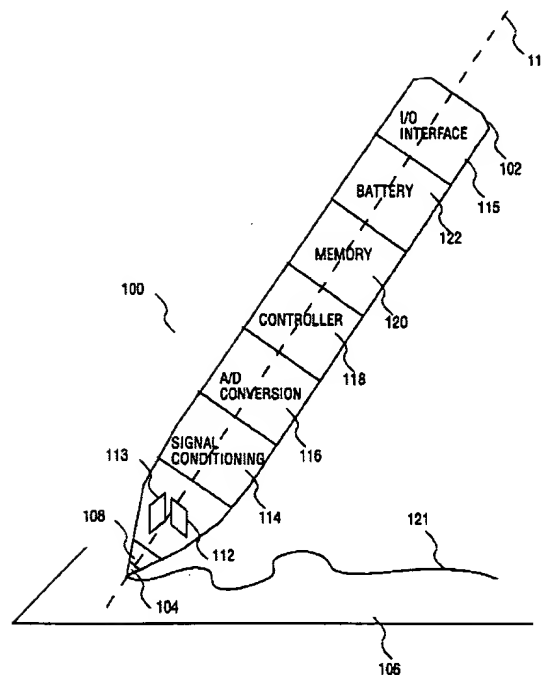

FIG. 1

US-PAT-NO: 5929841

DOCUMENT-IDENTIFIER: US 5929841 A

TITLE: Data input unit

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Detailed Description Text - DETX (6):
   The input unit 11 is, for example, a pen-type pointing device, and it indicates an arbitrary spatial position (three-dimensional position). The detecting unit 12 detects the arbitrary spatial position indicated by the input unit 11 as three-dimensional position information and stores the detected three-dimensional position information which is an absolute coordinate from the detecting unit 12.

Detailed Description Text - DETX (62):
   The input units 11a and 11b are, for example, pen-type pointing devices and indicate arbitrary spatial positions. The detecting unit 12 judges which input unit indicates the arbitrary spatial position and detects the spatial position as three-dimensional position information. Thereafter, the detecting unit 12 stores the detected three-dimensional position information which is an absolute coordinate from the detecting unit.
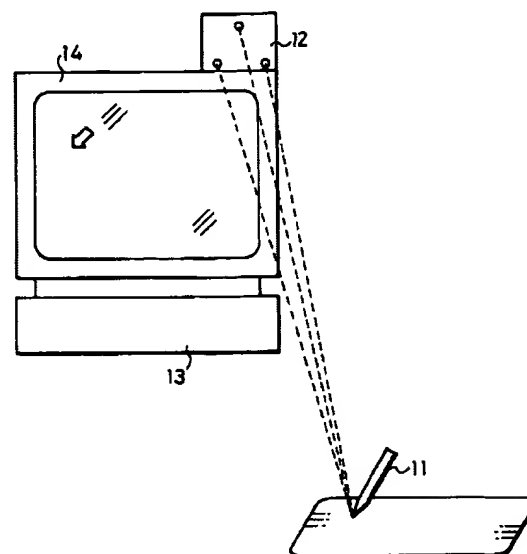
U.S. Patent   Jul. 27, 1999   Sheet 2 of 21   5,929,841

FIG. 2

US-PAT-NO: 6249606

DOCUMENT-IDENTIFIER: US 6249606 B1

TITLE: Method and system for gesture category recognition and
                 training using a feature vector

-------- KWIC --------

Abstract Text - ABTX (1):

A computer implemented method and system for gesture category recognition
and training. Generally, a gesture is a hand or body initiated movement of a
cursor directing device to outline a particular pattern in particular
directions done in particular periods of time. The present invention allows a
computer system to accept input data, originating from a user, in the form
gesture data that are made using the cursor directing device. In one
embodiment, a mouse device is used, but the present invention is equally well
suited for use with other cursor directing devices (e.g., a track ball, a
finger pad, an electronic stylus, etc.). In one embodiment, gesture data is
accepted by pressing a key on the keyboard and then moving the mouse (with
mouse button pressed) to trace out the gesture. Mouse position information and
time stamps are recorded. The present invention then determines a
multi-dimensional feature vector based on the gesture data. The feature vector
is then passed through a gesture category recognition engine that, in one
implementation, uses a radial basis function neural network to associate the
feature vector to a pre-existing gesture category. Once identified, a set of
user commands that are associated with the gesture category are applied to the
computer system. The user commands can originate from an automatic process
that extracts commands that are associated with the menu items of a particular
application program. The present invention also allows user training so that
user-defined gestures, and the computer commands associated therewith, can be
programmed into the computer system.

Brief Summary Text - BSTX (11):

A computer implemented method and system are described for gesture category
recognition and training. In one embodiment, a cursor directing device is
used. Generally, a gesture is a hand or body initiated movement of a cursor
directing device which outlines a particular pattern, in particular directions,
and can comprise one or more strokes. The present invention allows a computer
system to accept input data, originating from a user, in the form gesture data
that are made using a cursor directing device. In one embodiment, a mouse
device is used, but the present invention is equally well suited for use with
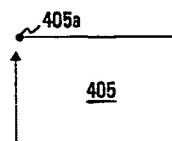
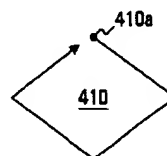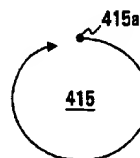FIGURE 4A

FIGURE 4B

FIGURE 4C
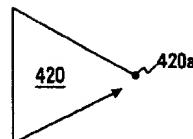
FIGURE 4D

5,903,229.

5,880,743.

US-PAT-NO: 5914718

DOCUMENT-IDENTIFIER: US 5914718 A

TITLE: Method and apparatus for organizing a work space for a
                computer controlled display system using borders and
                regions

-------- KWIC --------

Detailed Description Text - DETX (18):
   FIG. 2 illustrates a particular implementation of a graphical user interface
as may be used in the present invention. Referring to FIG. 2, the graphical
user interface is displayed on display 104 and interacted with via touch panel
105. The graphical user interface employs a work surface 202 and may employ a
plurality of accessible functions 201 as is shown. The work surface 202 is
where a user may draw various curves and where other graphic objects are
displayed. The accessible functions 201 are positioned at the button area 203
of the display. The functions 201 may include operations for editing graphic
objects (create, delete, move, shrink, etc.) or changing the operating mode of
the touch panel 103 (switching from draw and gesture mode).

Detailed Description Text - DETX (33):
   An anchor border is illustrated as border 502. Anchor borders are displayed
as "thick" lines. Anchor borders do not move as the result of a structure
operation (but may be selected and then moved by the user). Anchor borders
represent an "absolute" obstacle to any automatic adjustment of the work
surface's tessellation.

Current US Original Classification - CCOR (1):
345/863

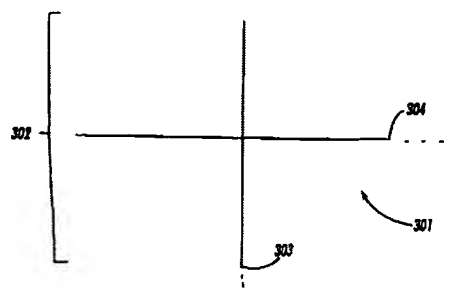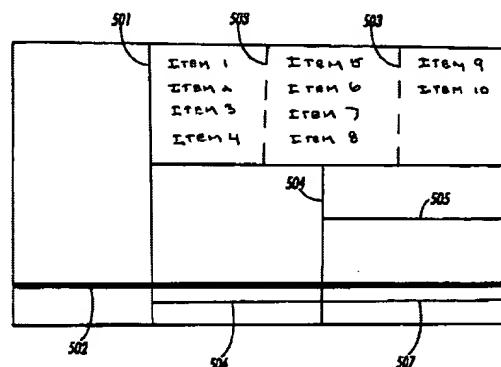**U.S. Patent**   Jun. 22, 1999   Sheet 3 of 26   **5,914,718**

FIG. 3

FIG. 5